Work Orde May-27-13 12:4.		70	. M	*10	2270*						Page 1
Revision ID:	D3183-045 Bearing Assembly			Accept	*N900	040	100* Setup Start Stop			I VI	S1* S2*
Start Date: Required Date: Reference:		tart Qty: 20.00 leq'd Qtyr 20.00	*20* *20*		Cust Item II Customer:	D:					
Approvals:	Process Plan: QC:	MUJ	Date: 13-05-28	Tooling: SPC (Y/N):	Da			R	tun Start Stop	"IV	R1* R2*
Sequence ID/ Work Center ID	-	peration escription		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revisio	n Nbr									
D3183	Rev C1	:									
*1 \\ \A\ \\ \A\ \\ \A\ \\ \A\ \\ \A\ \\ \		ardinge CNC LATHE Memo Turn D318.	SMALL 3-9 Cap as per Folio FA388D		FL 13/65/	30	<i>(4)</i>	20	_ Ø		
*110 *	QQ	C2- Inspect parts off r	nachine FAI/FAIB	0.00				7.0 180	C.		
QC Quality Control	'i ,	Memo		0.00	F.K. 13/05/	30		_86	<u></u> Ø		
120 *120*	Qo	C8- Inspect parts - sec	cond check	0.00	13-5-	7.0		20	<u>Q</u>		
QC Quality Control	·	Memo		0.00	~ (1,7-7)						

											DQA:	Date	e: ,
NCR: Y	es /	No				WORK ORDER NO	ON-CO	VFORM	MANCE / UP	DATE	QA Closed:	Date	a.
.													••
Work Orde	r:					DISPOSITION				AGAINST D	EPARTMENT	/PROCESS	
	-					Rewoi			Skid-tube	Crosstube		Water Jet	Engineering
Part N	0					Scra	· —		Machining	Small Fab	→	d. Eng. Coor.	Quality
NCR N	o					Use-as- Work Order Updat	-		noforming Large Fab	Finishing Composite	Rec/Sto	re/Packaging Supplier	Other
Root					Descr	ription of work order upda	ate	Initial	Ac	tion	Sign &		
Cause	Da	te	Step	Qty		or Non-conformance	Ch	ief Eng	Desc	ription	Date	Verification	QC Inspector
oc/Data							1						
quip/Tooling						•							
perator											3.		
/laterial	_	İ										:	!
etup	_												
Other	_ `												
rocess	_											1	
upplier	4												
raining	-												
Inapproved							EALU	T CATE	SORV.			<u> </u>	
Landin	g Gear	,				General	FAUL	CAIL	JONT				
Candin	Bene	lina			Г	Bend		Grain		Г	Ovalized	Г	Pressure/Forced
ŀ	_	-	Concer	itric to C	_{1/5}	BOM/Route		Hardwa	re	<u> </u>	Over/Under	tolerance	Temperature/Cure
ŀ	Crac		CONCEN		" -	Broken/Damaged		4	on Incomplete	<u> </u>	Part Incorre	⊢	Weld
ţ			rimped		<u> </u>	Burrs		4 '	ions Incomplete/	'Unclear	Part Lost/M	 -	Wrong Stock Pulled
·	Cuff					Contamination		Mainte	•	1	Part Moved	_	
t	-	Treat				Countersink		Mislabe		 	Positioned V	Vrong	
Ţ	Insp	ection	Strip in	Tube		Cut Too Short		Misread	l		Power Loss/	Surge	Other
Ī		les in E				Drill Holes		Offset		_			
ľ	_		•	xtrusion	·	Drawing		Out of C	Calibration				
ľ	Turr	ing Se	nuence			Finish		Out of S	equence				

Outside Dimensions

Wave/Twist in Tube

Folio

Work Ordo <i>May-27-13 12:4</i>		2270		*102			Page 2			
Item ID: Revision ID: Item Name:	D3183-045 Bearing Assen	ably •	,	Accept	*N900040	100*	Setup	Start Stop	*N.S	31* 30*
Start Date: Required Date: Reference:	5/30/13	Start Qty: 20.00 Req'd Qty: 20.00	*20* *20*		Cust Item ID: Customer:		٠.		IVI.	1 /
Approvals:		n:	Date:		Date:		Run	Start Stop	*NF	₹1* ₹2*
Sequence ID/ Work Center II 130 *130* Small Fab Small Fab	D	Operation Description Small Fab Memo Press D3183-	-5 Bearing into D3183-9	Set Up/ Run Hours 0.00 0.00 Cap as per Dwg D3183.	Tool ID Tool #	Plan Acce Code Qty	ept Rej Qty		-	Insp. Stamp
140 *140* QC Quality Control		QC5- Inspect part comple	eteness to step on W/O	0.00	0As 30	: +				SB 13(05
				\supset						

150

Identify as per dwg & Stock Location \$1235 0.00

150 Packaging

Packaging

Memo

Ship Sollitzy

												DQA:	Dat	te:	
NCR: Y	es /	No				WORK ORDER NON-	100	NFORN	ANCE / UP	DATE		•		•	*
	,											QA Closed:	Dat	te:	-
Work Orde						DISPOSITION				AGAINST (DΕ	PARTMENT	PROCESS		
Work Orde	٠٠. <u> </u>					Rework	1		Skid-tube	Crosstube		1	Water Jet		Engineering
Part N	lo					Scrap		١	Machining	Small Fab			d. Eng. Coor.		Quality
NCR N	lo					Use-as-is Work Order Update]		oforming Large Fab	Finishing Composite		Rec/Stor	e/Packaging Supplier		Other
Root					Descri	ption of work order update		nitial	Ac	tion		Sign &			
Cause	D	ate S	itep	Qty	c	or Non-conformance	Ch	ief Eng	Desc	ription		Date	Verification	n	QC Inspector
Doc/Data														1	
Equip/Tooling		1		Ì										-	
Operator		,													
Material															
Setup															
Other		į						:							
Process		İ						į							
Supplier															
Training		- 1													*
Unapproved															L
							AUL	T CATE	ORY						
Landi	ng Gear					General		_		_			,		•
	Ber	ding				Bend		Grain				Ovalized		Ш	Pressure/Forced
·	Cer	tre Not C	Concen	tric to (o/s	BOM/Route		Hardwa	re			Over/Under	tolerance		Temperature/Cure
	Cra	cks				Broken/Damaged		Inspecti	on incomplete	[Part Incorred	:t		Weld
	Cru	shed/Crir	mped			Burrs		Instructi	ions Incomplete/	Unclear		Part Lost/Mi	ssing		Wrong Stock Pulled
	Cuf	fs				Contamination		Mainte	nance			Part Moved			
	Hea	t Treat				Countersink		Mislabe	led	[Positioned V	/rong		
	ins	ection St	trip in	Tube	· [Cut Too Short .		Misread	1	[Power Loss/	Surge		Other
	Rip	oles in Be	end			Drill Holes		Offset		_					

Out of Calibration

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Folio

Work Ord May-27-13 12		02270		*102	270*						Page 3
Item ID: Revision ID: Item Name:	D3183-045 Bearing Ass			Accept	*N900	040 <i>°</i>	100	* s	etup Star	i Vi	S1* S2*
Start Date:	5/30/13	Start Qty: 20.00	*20*		Cust Item I	D:					
Required Date	: 5/30/13	Req'd Qty: 20.00	*20*	•	Customer:						•
Reference:									•		
Approvals:	Process P	Plan:	Date:	Tooling:	Da	ate:		R	kun Stai	"IV	R1*
	QC:		Date:	_ SPC (Y/N):	Da	ate:			Sto	*N	R2*
Sequence ID/ Work Center	ID	Operation Description		Set Up/ Run Hours	Tool ID		Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160		QC21- Final Inspection -	Work Order Release	0.00							

0.00

Memo

160

Quality Control

MUJ 13-05-70 MK (3-5-30

		DQA:	Date:	
NCR: Ves / No	WORK ORDER NON-CONFORMANCE / UPDATE			· · ·

											QA Closed:	Date	•
Work Ord	oř.					DISPOSITION				AGAINST D	EPARTMENT	/PROCESS	
Part I	- . No.					Rework Scrap Use-as-is Work Order Update		Skid-tube Crosstube Machining Small Fab Thermoforming Finishing Large Fab Composite				Water Jet od. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root					Descri	ption of work order update		nitial	Ac	tion	Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	ief Eng	Desc	cription	Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved													
			<u> </u>	<u> </u>	,	F	AUL	T CATE	GORY				
Landi	ing G	Gear				General							
		Bending Centre No Cracks Crushed/ Cuffs		ntric to O)/S	Bend BOM/Route Broken/Damaged Burrs Contamination		1 '	ion Incomplete ions Incomplete/	/Unclear	Ovalized Over/Under Part Incorre Part Lost/M Part Moved	ct ssing	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled
	\vdash	Heat Trea	at		-	Countersink	-	Mislabe		, 	Positioned \		
		Inspectio	n Strip in	Tube		Cut Too Short		Misread			Power Loss		Other
		Ripples ir				Drill Holes	\vdash	Offset					
			Vaves in E			Drawing	\vdash	i	Calibration	•	, 	· · · · · · · · · · · · · · · · · · ·	•
		Turning S				Finish	L	Out of 9	Sequence				
1	1	Wave/Tw	vist in Tub	ре		Folio		Outside	Dimensions			•	

May-27-13 12:42:36 PM

Work Order ID:

102270

Parent Item:

D3183-045

Parent Item Name:

Bearing Assembly

Start Date: 5/30/13

Required Date: 5/30/13

Start Qty: 20.00

Required Qty: 20.00

Comments:

IPP A04.02.18New issueKJ/DS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	~ *	ate Status
D3183-5 Bearing		Manufactured	No			110	Each	48.0000	1	20	1/3/8	5/20
Ü				Location		Loc Oty	<u>Lo</u>	c Code				
				ST235B 9865	53	48 48			ã			•
MDELRINR1.000		Purchased	No		ŕ	130	f	41.5670	0.0333	0.701052	2	٠.
Delrin Round Bar 1"				Location		Loc Qty	Lo	oc Code	C 20,000 c 200 pcc	- H - 183	3801 2704 1A30 3907	- C.F.
				MAT018	251	41.567			.76		X_ 13/	05/30

										DQA:	Date:	•
NCR: Y	es / No				WORK ORDER NON-	CON	FORM	MANCE / UPI	DATE	QA Closed:	Date:	•
					DISPOSITION				AGAINST DE	EPARTMENT,	/PROCESS	
Work Orde	er:					- I		a		٦	14/2422/24	1
D	•				Rework	4 1		Skid-tube	Crosstube		Water Jet	Engineering
Part N	10				Scrap	┤ 		Machining	Small Fab	⊣	d. Eng. Coor.	Quality Other
NICO N	la.				Use-as-is	4		noforming	Finishing	Kec/Stor	re/Packaging	Other
NCR N					Work Order Update	J		Large Fab	Composite	J	Supplier	ا لــا
Root				Descri	ption of work order update	In	itial	Act	tion	Sign &	٠.	
Cause	Date	Step	Qty		or Non-conformance	Chie	ef Eng	Descr	ription	Date	Verification	QC Inspector
Doc/Data												
quip/Tooling										1		
Operator		1				1						
Material												
Setup												
Other		ļ										
rocess		1										
Supplier		ļ										
raining												
Jnapproved												
					F	AULT	CATE	GORY				
Landin	ng Gear				General							
	Bending			L	Bend	Ц°	Grain			Ovalized	<u></u>	Pressure/Forced
ļ	Centre N	ot Conce	ntric to (o/s	BOM/Route		Hardwa	re		Over/Under		Temperature/Cure
Į	Cracks				Broken/Damaged		-	on Incomplete		Part Incorred	——	Weld
Ĺ	Crushed/	Crimped		L	Burrs	-		ions Incomplete/l	Jnclear	Part Lost/Mi	ssing	Wrong Stock Pulled
	Cuffs				Contamination	<u></u>	Mainte	nance		Part Moved		
	Heat Trea	at			Countersink	<u>'</u>	Mislabe	led		Positioned W		,
	Inspectio	n Strip in	Tube		Cut Too Short	∐'	Misread	I	[Power Loss/	Surge	Other
	Ripples ir	n Bend			Drill Holes	Цď	Offset					
	Torque V	Vaves in l	Extrusion	n [Drawing		Out of C	Calibration				
	Turning	Seguence			Finish	\Box	Out of S	Sequence				

Outside Dimensions

Wave/Twist in Tube

Folio

DART AEROSPACE LTD	Work Order:	102270
Description: Cap	Part Number:	D3183-9
Inspection Dwg: D3183 Rev: C1		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.830	+/-0.005	.829	7		FK-04	Vern.
Ø0.720	+/-0.002	.7205	7		N	4
Ø0.747	+/-0.001	-747	7		4	1,
R0.010	+/-0.010	,015	7		6	h
R0.031	+/-0.010	,031	7		ÿ	11
0.199	+/-0.001	. 199	1		n	IX.
0.276	+/-0.010	FFS,	7		r	11
0.039	+/-0.010	. 040	7		Ŋ	1)

Measured by:	[字_	Audited by:	77	Prototype Approval:	N/A
Date:	13/05/30	Date:	13-5-30	Date:	N/A

Rev	Date	e Change	Revised by	Approved
Α	04.04.20	20 New Issue (P/O D3183-045)	KJ/RF	1
В	06.03.09	09 Dimension Ø0.830 was Ø0.850	KJ/JLM 🔏	ad
			7.7	7/2/

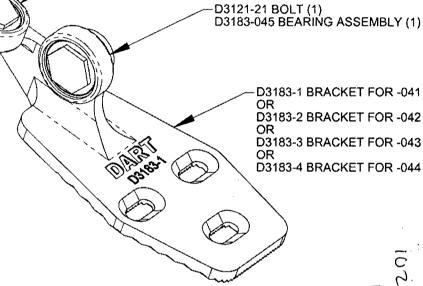




	DESIGN DRAWN BY		DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA				
8	CHECK	5 . P	APPROVED	DRAWING NO.	REV. C			
9	-#-		#	D3183	SHEET 1 OF 4			
	DATE		***************************************	TITLE	SCALE			
	04.02.17			BRACKET ASSEMBLY	1:1			
	Α	0	3.01.24	NEW ISSUE				
	В	0	3.06.17	REMOVE BEARING; 1.012 WS 0.882)			
	C ,04.02.17		4.02.17	ADD -045/-9; 0.182 WAS 0.431				
	Cı	-#71	= 04.11.09	0.830 WAS 0.850				

DEO ATTACHED

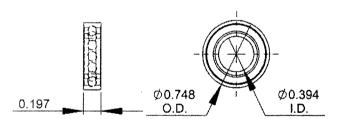
D3121-21 BOLT (1) D3183-045 BEARING ASSEMBLY (1)



D3183-1 BRACKET FOR -041 (SHOWN) D3183-2 BRACKET FOR -042 (OPPOSITE) D3183-3 BRACKET FOR -043 (SIMILAR)

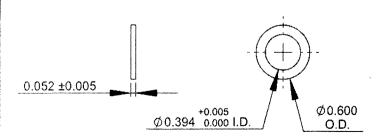
D3183-4 BRACKET FOR -044 (SIMILAR)

D3183-041 BRACKET ASSEMBLY (SHOWN)
D3183-042 BRACKET ASSEMBLY (OPPOSITE)
D3183-043 BRACKET ASSEMBLY (SIMILAR) D3183-044 BRACKET ASSEMBLY (SIMILAR)



D3183-5 BEARING FICATION CONTROL DRAWING

- 1) SINGLE ROW, DEEP GROOVE. CONRAD TYPE, SHIELDED 2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
- 3) ALL DIMENSIONS ARE IN INCHES



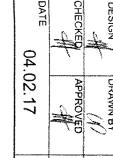
D3183-7 WASHER

- 1) MATERIAL: AISI 303 ROUND BAR (M303R) **ANNEALED**
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES

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DRAWING NO. D3183

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA REV.

SHEET 2 OF 4 SCALE ř

1.18 4.17 3.881 0.830 BRACKET 0.218 ASSEMBLY 0.515

1.030 1.90

DEO ATTACHED 4.8° R_{0.19} (TYP) R0.063 0.536 0.100 0.182 0.070 (TYP) В 1.012 0.182 C'BORE Ø0.201x0.100 DEEP 0.786DRILL #21 (Φ0.159) TAP 10-32UNF-3B THRU R0.19 (TYP) 0.162 R0.25 (TYP) (2 PLACES) R0.19 (TYP) (d 0.356 R0.29 (TYP) RUNOFF Ø0.392 +0.002 (TYP) (TYP) 用 -R0.19 R0.19 (TYP) DART - D3183-1 R_{0.50} 3,105 2.799 2.075 (RIDGES) 100° 0.500 **DETAIL A** 1.27 0.162

SEE DETAIL B

D3183-1 BRACKET SHOWN **D3183-2 BRACKET OPPOSITE**

- 1) D3183-1 CAN BE MADE FROM D3183-3 D3183-2 CAN BE MADE FROM D3183-4
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC, M17-4-B)
 - MIN ULTIMATE STRENGTH = 150 ksi MIN YIELD STRENGTH = 100 ksi
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.015 4) ENGRAVE DART P/N & LOGO AS SHOWN
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

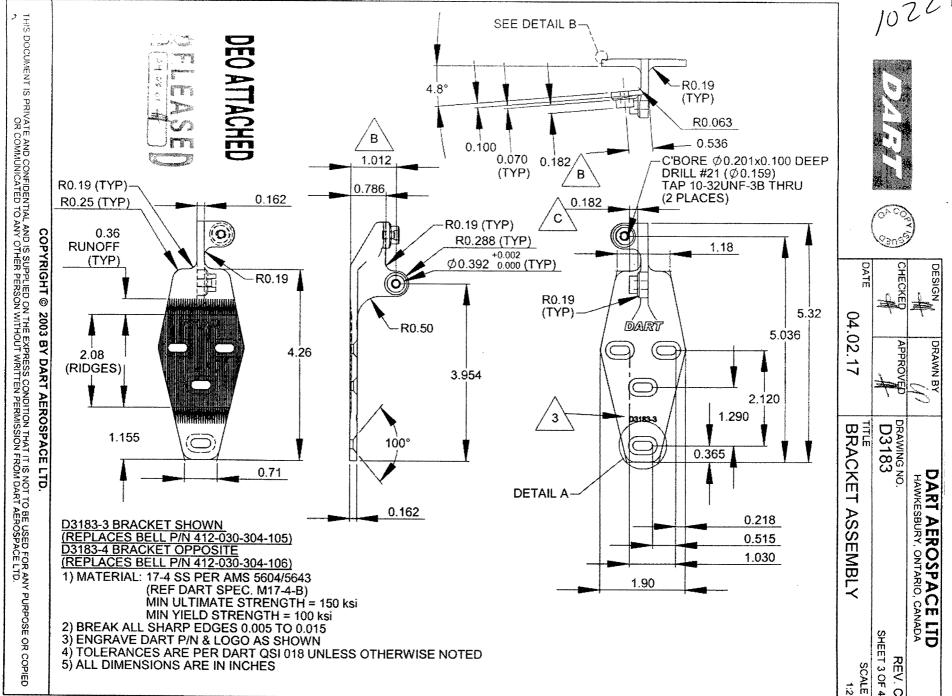
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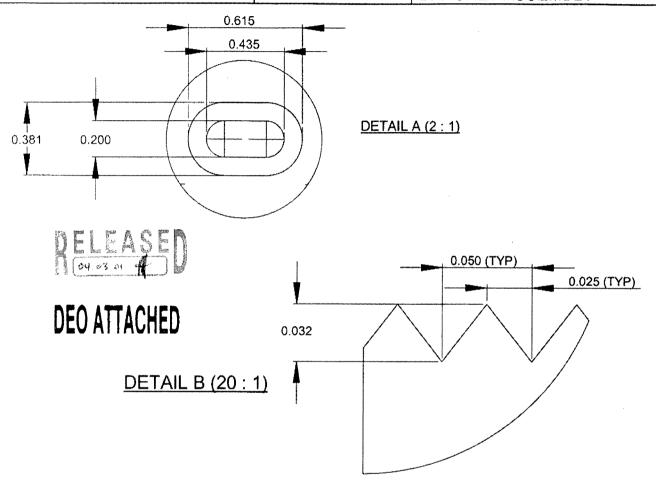
102270

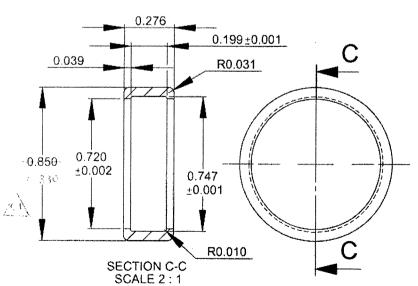
SCALE





DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
 CHECKED	APPROVED	DRAWING NO.	REV. C	
DATE IN		TITLE	SHEET 4 OF 4 SCALE	
04.	02.17	BRACKET ASSEMBLY	1:1	





D3183-9 CAP

- 1) MATERIAL: DELRIN ROD, Ø1.00 (REF DART SPEC. M-DELRIN-R1.00)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
 3) ALL DIMENSIONS ARE IN INCHES

D3183-045 BEARING ASSEMBLY

1) ASSEMBLE D3183-5 BEARING AND D3183-9 CAP

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102270

DRAWING	NO.	TITLE		, REV.C1	DART AER	OSPACE LTD	D.E.O. NO.		SHEET	NO.	SCALE
D3183		BRACKET	ASSEMBLY		ENGINEE	RING ORDER	D3183-C1-	1 🕜	SHEET 1	OF 1	NTS
DRAWN	P		CHECKED	_ <u>J</u> L	MFG. APPR.	X .	APPROVED /	W	DE APPR.	4	
DATE	10.05.	14	DATE	10.06.30		06 30	DATE 10/	06/30	DATE (o	06/30	

D3183-5 BEARING

ADD POSSIBLE SUPPLIER: KML P/N 6800-ZZ

BASIC LOAD RATING REQUIREMENT:

Cr = 1720 N (386 lb) MIN [DYNAMIC]

Cor = 840 N (188 lb) MIN [STATIC]

REF PAR 10-012



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